

(19)

Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11)

EP 0 951 128 A3

(12)

## EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
13.09.2000 Bulletin 2000/37

(51) Int Cl.7: H02J 7/00, H02J 7/35

(43) Date of publication A2:  
20.10.1999 Bulletin 1999/42

(21) Application number: 99302475.1

(22) Date of filing: 30.03.1999

(84) Designated Contracting States:  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE  
Designated Extension States:  
AL LT LV MK RO SI

(72) Inventors:  
• Canter, Stanley  
Marina del Rey, California 90292 (US)  
• Hall, John C.  
Rancho Palos Verdes, California 90275 (US)

(30) Priority: 13.04.1998 US 59224

(71) Applicant: SPACE SYSTEMS / LORAL, INC.  
Palo Alto, California 94303 (US)

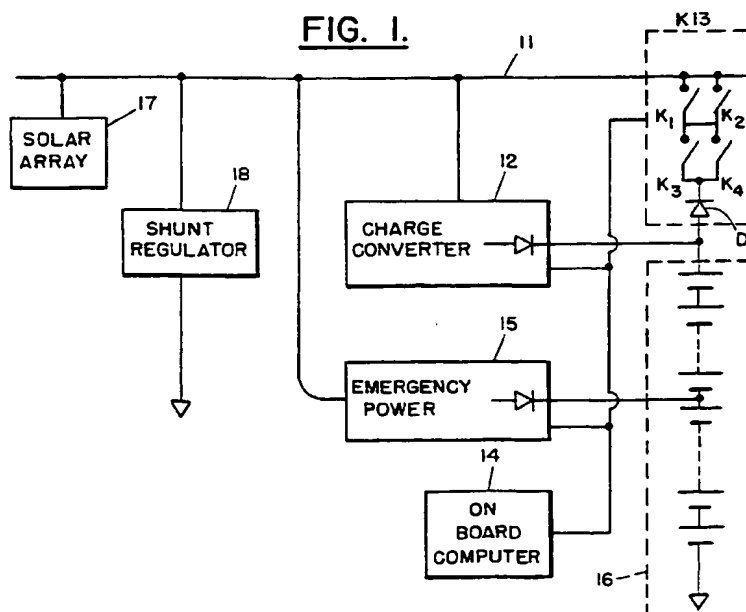
(74) Representative: Finnie, Peter John  
Elkington and Fife,  
Prospect House,  
8 Pembroke Road  
Sevenoaks, Kent TN13 1XR (GB)

### (54) A spacecraft power system

(57) A spacecraft power system having an increased number of battery cells (16) that is charged to the battery's full capacity, which exceeds a predetermined maximum voltage allowed by a bus (11). The battery (16) can be disconnected from the bus (11) during charging. The battery (16) is then partially discharged

to accommodate the bus (11) before being reconnected. This provides a reduced voltage range experienced by the bus, as the minimum battery voltage is increased by the increased number of cells. A tap is provided to supply the bus (11) with power when the battery (16) is disconnected from the bus, and when a solar array (17) powering the bus fails to supply current to the bus.

FIG. 1.



EP 0 951 128 A3



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 99 30 2475

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	US 5 025 202 A (ISHII AKIHIKO ET AL) 18 June 1991 (1991-06-18) * abstract *	1-16	H02J7/00 H02J7/35
A	US 5 394 075 A (AHRENS ALLAN F ET AL) 28 February 1995 (1995-02-28) * abstract *	1-16	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H02J B64G
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 July 2000	Examiner Moyle, J
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another document of the same category  A : technological background  O : non-written disclosure  P : intermediate document</p> <p>T : theory or principle underlying the invention  E : earlier patent document, but published on, or after the filing date  D : document cited in the application  L : document cited for other reasons  &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03/82 (P0-C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 2475

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-07-2000

Patent document cited in search report		Publication date	Patent family member(s)	Publication: date
US 5025202	A	18-06-1991	FR 2651932 A	15-03-1991
			JP 2038830 C	28-03-1996
			JP 3265013 A	26-11-1991
			JP 7069750 B	31-07-1995
-----				
US 5394075	A	28-02-1995	DE 69309257 D	30-04-1997
			EP 0625111 A	23-11-1994
			JP 2723361 B	09-03-1998
			JP 7503433 T	13-04-1995
			WO 9415834 A	21-07-1994
-----				

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**THIS PAGE BLANK (USPTO)**